INSTRUCTIONS FOR USE

POWERHEART AUTOMATED EXTERNAL DEFIBRILLATOR

G3 PLUS 9390A AND 9390E

112-0038-201 A

CARDIAC science™

AT THE HEART OF SAVING LIVES®

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PATENTS

This device is covered by the following U.S. and foreign patents:

5,792,190; 5,999,493; 5,402,884; 5,579,919; 5,749,902; 5,645,571; 6,029,085; 5,984,102; 5,919,212; 5,891,172; 5,674,266; 5,700,281; 5,891,173; 5,968,080; 6,263,239; 5,797,969; D402,758; D405,754; 5,909,138; 6,173,203; 6,088,616; 5,897,576; 5,955,956; 6,083,246; 6,064,909; 6,038,473; 5,868,794; 6,115,638; 6,366,809; 5,474,574; 6,246,907; 6,289,243; 6,411,846; 6,480,734; 6,658,290; EP00756878

Other U.S. and foreign patents pending.

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1 Product Information and Safety

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Before Operating the Powerheart G3 AED:

Become familiar with the various safety alerts in this section.

Safety alerts identify potential hazards using symbols and words to explain what could potentially harm you, the patient, or the Powerheart G3 AED.

For additional information about the G3 Plus AED, see the *Powerheart Automated External Defibrillator G3 Plus Operator and Service Manual*.

Indications for use

The Powerheart AED G3 and the Powerheart AED G3 Automatic devices are intended to be used by personnel who have been trained in its operation. The user should be qualified by training in basic life support or other physician-authorized emergency medical response.

The device is indicated for emergency treatment of victims exhibiting symptoms of sudden cardiac arrest who are unresponsive and not breathing. Post-resuscitation, if the victim is breathing, the AED should be left attached to allow for acquisition and detection of the ECG rhythm. If a shockable ventricular tachyarrhythmia recurs, the device will charge automatically and advise the operator to deliver therapy (G3) or automatically deliver the shock (G3 Automatic).

When a patient is a child or infant up to 8 years of age, or up to 55 lbs (25kg), the device should be used with the Model 9730 Pediatric Attenuated Defibrillation Electrodes. The therapy should not be delayed to determine the patient's exact age or weight.

Warranty Information

The AED limited warranty for defects in materials or workmanship is seven years from the date of purchase. For the complete warranty statement, see the warranty paper packaged with your AED or refer to the Operator and Service Manual on the Quick Start CD-ROM.

Cleaning and Care

Keep system components clean. Perform preventive maintenance as needed. For information on cleaning and maintenance of components, see Chapter 4, *Maintenance and Troubleshooting*.

Safety Alert Descriptions

The symbols shown below identify potential hazard categories. The definition of each category is as follows:

WARNING

This alert identifies hazards that may cause serious personal injury or death.

CAUTION

This alert identifies hazards that may cause minor personal injury, product damage, or property damage.

Warnings and Cautions

This section lists general warnings and cautions. Those pertaining to specific functions and procedures are included in the text where appropriate.

DANGER: Fire and Explosion Hazard

Do not use in the presence of flammable gasses (including concentrated oxygen) to avoid possible explosion or fire hazard.

WARNING: Shock Hazard

Defibrillation shock current flowing through unwanted pathways is potentially a serious electrical shock hazard. To avoid this hazard during defibrillation abide by all of the following:

- Do not use in standing water or rain. Move patient to dry area

- Do not touch the patient, unless performance of CPR is indicated

- Do not touch metal objects in contact with the patient

- Keep defibrillation pads clear of other pads or metal parts in contact with patient

- Disconnect all non-defibrillator proof equipment from the patient before defibrillation

WARNING: Shock and Possible Equipment Damage.

Disconnect all non-defibrillator proof equipment from the patient before defibrillation to prevent electrical shock and potential damage to the equipment.

WARNING: Electric Shock and Fire Hazard.

Do not connect any telephones or unauthorized connectors to the socket on this equipment.

WARNING: Battery is Not Rechargeable.

Do not attempt to recharge the battery. Any attempt to recharge the battery may result in an explosion or fire hazard.

WARNING: Shock Hazard.

Do not disassemble the AED. Failure to observe this warning can result in personal injury or death. Refer maintenance issues to Cardiac Science authorized service personnel.

WARNING: Possible Radio Frequency (RF) Susceptibility.

RF susceptibility from cellular phones, CB radios, and FM 2-way radio may cause incorrect rhythm recognition and subsequent shock advisory. When attempting a rescue using the AED, do not operate wireless radiotelephones within 1 meter of the AED – turn power OFF to the radiotelephone and other like equipment near the incident.

WARNING: Possible Interference with Implanted Pacemaker.

Therapy should not be delayed for patients with implanted pacemakers and a defibrillation attempt should be made if the patient is unconscious and not breathing. The AED has pacemaker detection and rejection, however with some pacemakers the AED may not advise a defibrillation shock. (Cummins, R., ed., Advanced Cardiac Life Support; AHA (1994): Ch. 4)

When placing Pads:

- Do not place the pads directly over an implanted device.
- Place the pad at least one inch from any implanted device.

WARNING: Electromagnetic Compatibility.

Use of accessories or cables other than those specified, with the exception of accessories and cables sold by Cardiac Science Corporation as replacement parts for internal components, may result in increased emissions or decreased immunity of the AED.

WARNING: Improper Equipment Placement.

Position the AED away from other equipment. If it is necessary to use the AED adjacent to or stacked with other equipment, then observe the AED to verify normal operations.

CAUTION: Restricted Use.

Federal law restricts this device to be sold by or on the order of a physician or practitioner licensed by state law in which he/she practices to use or order the use of the device.

CAUTION: Read this Operation and Service Manual carefully.

It contains information about your safety and the safety of others. Become familiar with the controls and how to use the AED properly before operating the product.

CAUTION: Temperature Extremes.

Exposing the AED to extreme environmental conditions outside of its operating parameters may compromise the ability of the AED to function properly. The RescueReady® daily self-test verifies the impact of extreme environmental conditions on the AED. If the daily self-test determines environmental conditions outside of the AED's operating parameters, a "Service Required" alert will be issued to prompt the user to move the AED to environmental conditions within the acceptable operating parameters at once. See Chapter 5, *Technical Data*.

CAUTION: Lithium Sulfur Dioxide Battery.

Pressurized contents: never recharge, short circuit, puncture, deform, or expose to temperatures above 65°C (149°F). Remove the battery when discharged.

CAUTION: Battery Disposal.

Recycle or dispose of the lithium battery in accordance with all federal, state and local laws. To avoid fire and explosion hazard, do not burn or incinerate the battery.

CAUTION: Use only Cardiac Science Approved Equipment.

Using batteries, pads, cables, or optional equipment other than those approved by Cardiac Science may cause the AED to function improperly during a rescue.

CAUTION: Possible Improper AED Performance.

Using pads that are damaged or expired may result in improper AED performance.

CAUTION: Serial Communication Cable.

The AED will not function during a rescue when the serial communication cable is connected to its serial port. When the serial communication cable is connected to the AED during a rescue, the prompt "Remove Cable to Continue Rescue" will be heard until you remove the serial communication cable.

CAUTION: Moving the Patient During a Rescue.

During a rescue attempt, excessive jostling or moving of the patient may cause AEDs to improperly analyze the patient's cardiac rhythm. Stop all motion or vibration before attempting a rescue.

CAUTION: Serial Communication Cable.

The serial communication cable is only for use with the AED; it is not to be used with a telephone.

CAUTION: Systems Statement.

Equipment connected to the analog and digital interfaces must be certified to the respective IEC standards (i.e. IEC 60950 for data processing equipment and IEC 60601-1 for medical equipment).

Furthermore, all configurations shall comply with the system standard IEC 60601-1-1. Anybody who connects additional equipment to the signal input part or signal output part configures a medical system, and is therefore, responsible that the system complies with the requirements of the system standard IEC 60601-1-1.

CAUTION: Case Cleaning Solutions.

When disinfecting the case, use a non-oxidizing disinfectant, such as ammonium salts or a glutaraldehyde based cleaning solution, to avoid damage to the metal connectors.

CAUTION: Equipment Malfunction.

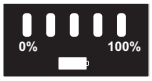
Portable and RF communications equipment may affect the AED. Always observe the recommended separation distances as defined in the EMC declaration tables.

CAUTION: Equipment Malfunction.

The AED requires special precautions regarding EMC. Use the AED according to the guidelines of the EMC declaration tables.

Symbols and Labels

The following symbols may appear in this manual, on the AED, or on its accessories. Some of the symbols represent standards and compliances associated with the AED and its use.

Symbol	Description
	Caution. Consult accompanying documentation.
	Dangerous Voltage: The defibrillator output has high voltage and can present a shock hazard. Please read and understand all safety alerts in this manual before attempting to operate the AED.
	Defibrillator Proof Type BF Equipment: The AED, when connected to the patient's chest by the pads, can withstand the effects of an externally applied defibrillation shock.
	CE Mark: This equipment conforms to essential requirements of the Medical Device Directive 93/42/EEC.
IP24	The AED is protected against the effects of splashing water in accordance with IEC 60529.
	Classified by ETL Semko with respect to electric shock, fire and mechanical hazards only in accordance with UL 60601-1, CAN/CSA C22.2 No.601.1-M90, EN60601-1 and EN60601-2-4.Conforms to UL Standard UL60601-1. Certified to CAN/CSA Standard C22.2 No. 601.1-M90.
	International symbol for ON. Open the lid to turn on the AED.
	Indicates the AED battery status. The illuminated areas indicate the remaining battery capacity.

Symbol	Description
	Check pads. The pads are missing, not connected or have compromised functionality.
	Indicates AED requires maintenance by authorized service personnel.
	When the SHOCK indicator is lit, press this button to deliver a defibrillation shock.
	A red indicator with a BLACK X means the AED requires operator attention or maintenance, and is not RescueReady.
	A green indicator without a BLACK X means the AED is RescueReady.
	Use pads by this date.
	Date of manufacture, year and month.
	Date of factory recertification (R).
	Latex free.

Symbol	Description
	Disposable. Single patient use only.
	Tear here to open.
	Do not recharge battery.
	Position of pads on the chest of patient.
	For use by or on the order of a Physician, or persons licensed by state law.
	Dispose of properly in accordance with all state, province, and country regulations.
	Do not incinerate or expose to open flame.
	Explosion hazard: Do not use in the presence of a flammable gas, including concentrated oxygen.
	Upper and lower temperature limits.

Symbol	Description
SN	Serial Number.
MODEL	Device model number, battery model number.
LOT	Lot number
OPTION	Option number
$LiSO_2$	Lithium sulfur dioxide
	Serial communication port
	Additional information is provided in the AED Operation and Service Manual.
	Manufacturer
EC REP	Authorized representative in the European Community
	Waste Electronic Electrical Equipment (WEEE). Separate collection for waste electrical and electronic equipment.

2 About the AED

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- Voice Prompts and Text Display 2-14

This section presents information about the AED and its use.

AED Description

The G3 Plus is a self-testing, battery-operated automated external defibrillator (AED). The AED automatically analyzes the patient's electrocardiogram (ECG) through defibrillation pads applied to the patient's bare chest. If a shock is required, the AED advises the operator to press the button to deliver a shock. The Powerheart AED G3 Automatic automatically delivers a shock if needed. The AED uses a single button and guides the operator through the rescue using a combination of voice prompts, audible alerts, and visible indicators.

AED Modes

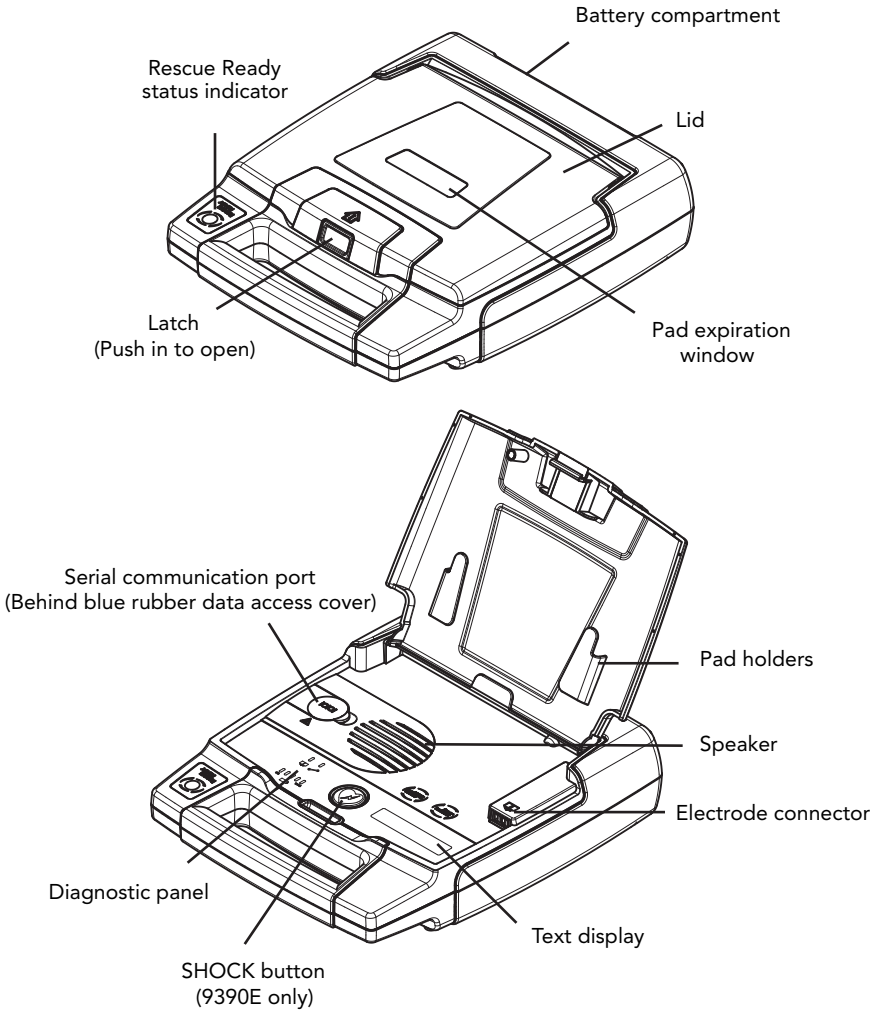
Operating Mode: Defined as having the battery installed and the lid open. This is the mode the AED would be in during an actual rescue situation.

Standby Mode: When the battery is installed, but the lid is closed. In this mode the AED is not being used in a rescue. The device will conduct its routine self-tests to ensure proper operation.

Storage Mode: When the battery is removed, such as during shipping or transport. With the battery removed, the AED is unable to perform self-tests or rescues.

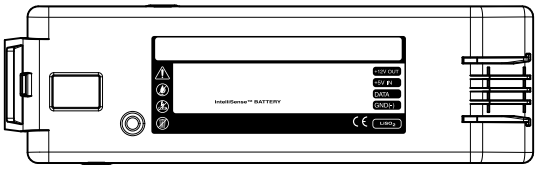
AED Parts

The following drawings show the AED parts and their locations.



IntelliSense Battery

The IntelliSense battery automatically stores important usage information, enabling the battery to maintain a complete history of its operating life. The battery history can be reviewed using RescueLink® software.



Dispose of the battery according to local regulations.

Warning. Battery is Not Rechargeable.

Do not attempt to recharge the battery. Any attempt to recharge the battery may result in an explosion or fire hazard.

Caution. Lithium Sulfur Dioxide Battery.

Pressurized contents: never recharge, short circuit, puncture, deform, or expose to temperatures above 65°C (149°F). Remove the battery when discharged.

Caution. Battery Disposal.

Recycle or dispose of the lithium battery in accordance with all federal, state and local laws. To avoid fire and explosion hazard, do not burn or incinerate the battery.

Caution. Use only Cardiac Science Approved Equipment.

Using batteries, pads, cables, or optional equipment other than those approved by Cardiac Science may cause the AED to function improperly during a rescue.

Caution. Possible Improper AED Performance.

Using pads that are damaged or expired may result in improper AED performance.

Note: Battery model 9146 is for use only with the Powerheart AED G3 and Powerheart AED G3 Automatic.

Battery Operating Life

The battery operating life depends on the type of battery, actual use, and environmental factors.

Table 2-1: Normal Battery Operating Life

Model	Estimated Shelf Life (from date of manufacture)	Full Operational Replacement Guarantee (from date of installation)	Typical Shocks
9146 Lithium	5 Years	4 Years	Up to 290

Battery Shelf Life

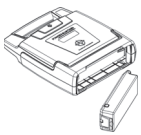
The batteries have a shelf life of five years. Shelf life is defined as the length of time a battery can be stored, prior to installation into an AED, without degrading its performance.

Note: Storing the battery outside its specific range (0-50°C) will decrease battery life.

Battery Installation

To install the battery:

1. With the label on the battery facing the AED battery compartment, insert the battery as shown.



2. Push the latched end of the battery into the AED until the battery snaps into place. The battery should be flush with the AED case.

3. Open the lid for 5 seconds to initiate a self-test. If the battery is installed properly, the SmartGauge battery indicator LEDs illuminate; additionally, the status indicator turns green. If service is required, the service indicator illuminates.

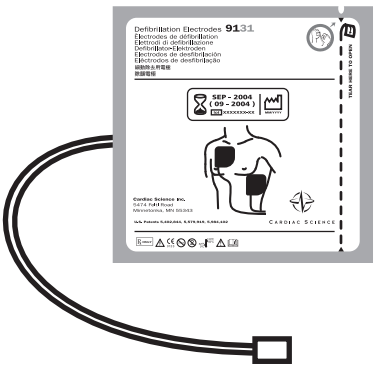
Note: When the last battery indicator is red, the battery is low. Replace the battery right away. A new battery typically takes 10 seconds to charge the AED to maximum energy.

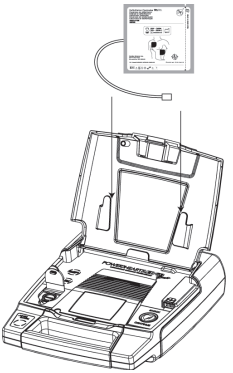
Defibrillation Pads

Defibrillation pads come already installed in the AED. They are stored in a ready-to-use, sealed package containing one pair of self-adhesive pads with an attached cable and connector. The pads are disposable and should be discarded after a rescue.

The pads have a limited shelf life and should not be used beyond the expiration date. Keep a fresh, unopened pair of pads plugged into the AED at all times.

After an AED self-test, an audible and visual alert indicates that the pads are missing, unplugged, or damaged.





Pad Installation

To install the pads:

1. Open the lid of the AED.
2. Place the pad package into the lid so that the expiration label is visible through the window on the lid.
3. Match the color of the connectors (red to red), then plug the pad connector into the AED case. Once the pad connector is plugged in, the PAD indicator should extinguish.
4. Store the excess cable length in the bottom holder. With the pad package secured to the AED lid, close the lid.
5. Make sure the expiration date is visible through the window of the lid and ensure that the status indicator is

green. If the pads are not installed properly, the status indicator will be red. Call technical support for assistance.

Caution. Use only Cardiac Science Approved Equipment.

Using batteries, pads, cables, or optional equipment other than those approved by Cardiac Science may cause the AED to function improperly during a rescue.

Caution. Possible Improper AED Performance.

Using pads that are damaged or expired may result in improper AED performance.

Directions for Use

Pads are for short term use only. Do not open until ready to use.

Caution. Equipment Damage.

Do not pull on the lead wire to separate the pads from the blue liner. Follow directions on the pad packaging:

1. Ensure that the skin site is clean and dry.
2. Separate one pad from the blue liner.
3. Place one pad on the bare skin in either location.
4. Peel and place the remaining pad in the opposite location.

AED Indicators

The following indicators are located on the AED.

RescueReady Status Indicator

The status indicator is located on the Powerheart G3 AED handle.

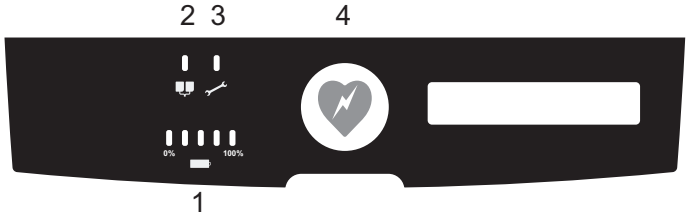
Indicator	Color	Status
	Green	The AED is RescueReady. Self-tests have verified that: • Battery has an adequate charge • Pads are properly connected to the AED and functioning • Integrity of the internal circuitry is good
	Red	The AED requires maintenance.

Audible Maintenance Indicator

When the daily, weekly, or monthly self-test determines service is required, the AED beeps every 30 seconds until the lid is opened or the battery power is depleted. Opening and closing the lid may deactivate the beep. If the error is not corrected by the next self-test, the AED begins beeping again.

Diagnostic Panel

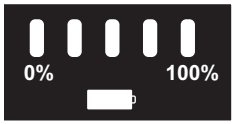
The diagnostic panel has these indicators:



1 SmartGauge Battery Indicator
2 Pads Indicator
3 Service Indicator
4 Shock Button (Powerheart G3 model 9390E only)

SmartGauge Battery Status Indicator

The SmartGauge battery status indicator has five LEDs, four green and one red. The four green LEDs display the remaining capacity of the battery. With use, the green LEDs extinguish, from right to left, as battery capacity decreases. When the red LED illuminates, replace the battery.

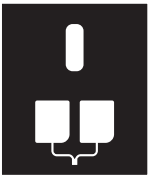


Note: When the red LED initially illuminates—upon lid opening or at any time during a rescue—a **BATTERY LOW** prompt appears. However, the AED is capable of delivering at least 9 more defibrillation shocks after the first **BATTERY LOW** prompt appears.

When the AED battery cannot deliver any more shocks, **BATTERY LOW** appears on the text display and the red battery LED illuminates. To continue the rescue, leave the lid open, remove the battery, and replace with a fresh battery. If battery replacement takes longer than 60 seconds, the first rescue terminates and a second rescue begins when the battery is inserted.

Pads Indicator

An illuminated Pads LED indicates one of these conditions:



- Pads improperly connected to the AED
- Pads not within operational specifications (cold, dried, damaged)
- Pads disconnected from the patient during a rescue

Service Indicator

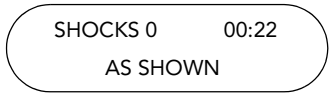
The Service LED illuminates when the AED requires maintenance to be performed by qualified service personnel.

Shock Indicator

For the Powerheart G3 model 9390E only: The AED has a single button: the Shock/Continue button. The word Shock and the shock button indicator LED illuminates red when the AED is ready to deliver a defibrillation shock to the patient.

Text Display

The text display has two lines of text. The text display provides information about system initialization, text prompts and data during a rescue, and diagnostics.



When the lid is opened, the text display shows version identifiers for the internal code, voice prompts and text prompts. The text display also shows the current date and time.

During a rescue, the text display shows instructional prompts, the number of shocks delivered and the elapsed time from the beginning of the rescue (when the lid was first opened). During CPR, a countdown timer is displayed. The text version of the voice prompts are also displayed.

Note: There is a three second delay between the time the AED lid is opened and the start of the rescue. This three second delay is not included in the elapsed rescue time.

Voice Prompts and Text Display

The voice prompts activate when the AED lid is opened and help guide the operator through a rescue. The AED text display provides a visual display of most of the voice prompts.

These tables list the voice and text prompts and descriptions of when the prompts are issued.

Table 2-2: Initial Instructions

Voice Prompt	Text Display	Situation
"Stay calm. Follow these voice instructions. Make sure 911 is called now!"	CALL 911!	Plays after lid opening self test, default ON.
"Stay calm. Follow these voice instructions. Make sure Emergency Services are called now!"	CALL EMERGENCY SERVICES NOW!	Medical Director may use MDLink to select this prompt instead of "CALL 911!". MDLink also allows the emergency services and 911prompt to be disabled.

Table 2-3: Preparation

Voice Prompt	Text Display	Situation
"Begin by exposing patient's bare chest and torso. Remove or cut clothing if needed."	BARE PATIENT'S TORSO REMOVE CLOTHING	Prompts the rescuer to remove patient clothing.
"When patient's chest and torso are exposed, remove square foil package from lid of AED."	WHEN CHEST IS BARE REMOVE FOIL PACKAGE	Prompts the rescuer to remove the pads from AED lid.
"Tear open foil package across dotted line and remove pads."	TEAR OPEN PACKAGE REMOVE PADS	Prompts the rescuer to open the pad package and remove pads.

Table 2-3: Preparation (continued)

Voice Prompt	Text Display	Situation
"Next, separate one of the white pads completely from blue plastic liner. Begin peeling from the tabbed corner."	PEEL ONE PAD FROM BLUE PLASTIC LINER	Repeats every 3 seconds until the pads are separated. If a pad has been peeled before the prompt starts, this prompt will be skipped. This prompt will be interrupted when pad is peeled.
"Firmly place the pad without the liner on the patient, exactly as illustrated. This pad can be placed on either of the two locations shown."	PRESS PAD FIRMLY TO CHEST AS SHOWN	Prompts the rescuer to place one pad on the patient.
"Next, peel the blue plastic liner off of the second white pad."	PEEL SECOND PAD OFF BLUE PLASTIC LINER	Prompts the rescuer to remove the liner from the second pad.
"Firmly place the second pad on the opposite location, exactly as illustrated."	PRESS PAD FIRMLY AS SHOWN	Repeats until second pad placement is sensed. If the pad is placed before prompt starts then this prompt will be skipped. This prompt will be interrupted when second pad is placed.

Table 2-4: Analysis

Voice Prompt	Text Display	Situation
"Do not touch patient! Analyzing heart rhythm. Please wait."	DO NOT TOUCH PATIENT ANALYZING RHYTHM	Repeats until analysis of the patient's cardiac rhythm is completed. This prompt will be interrupted when ready to shock.

Table 2-4: Analysis

Voice Prompt	Text Display	Situation
"Preparing shock. Move away from the patient!"	NO CONTACT WITH THE PATIENT	Repeats while the AED is preparing to deliver a defibrillation shock (charging).

Table 2-5: Delivering Shock - Semi-Automatic

Voice Prompt	Text Display	Situation
"Press red flashing button to deliver shock."	PRESS BUTTON TO DELIVER SHOCK	Prompts after the AED is fully charged and ready to deliver the defibrillation shock. The RED SHOCK indicator flashes and the phrase repeats for 30 seconds or until the SHOCK button is pushed.
"Shock Delivered"	SHOCK DELIVERED	Prompts when the shock is delivered.

Table 2-6: Delivering Shock - Fully Automatic

Voice Prompt	Text Display	Situation
"Shock Will be Delivered in"	SHOCK IN:	After the AED is fully charged and ready to deliver the defibrillation shock. The SHOCK will automatically be administered approximately three seconds after the end of the voice prompt.
"Three"	THREE	Prompts approximately three seconds prior to delivering shock.
"Two"	TWO	Prompts approximately two seconds prior to delivering shock.
"One"	ONE	Prompts approximately one second prior to delivering shock.
"Shock Delivered"	SHOCK DELIVERED	Prompts when the shock is delivered.

Table 2-7: CPR Prompts

Voice Prompt	Text Display	Situation
Note: The AED is shipped from the factory with ENHANCED MODE ON. The Medical Director may modify the CPR options in MDLink. This table lists ENHANCED CPR prompts.		
"It is now safe to touch the patient."	NOW SAFE TO TOUCH THE PATIENT	Advises the rescuer that it is safe to touch the patient: • After the AED delivers a shock • After the AED detects a non-shockable cardiac rhythm
"When instructed, give 30 rapid compressions then give 2 breaths"	30 COMPRESSIONS 2 BREATHS	Prompts rescuer to correctly give compressions and breaths.
"Place heel of one hand on center of chest between nipples."	PLACE ONE HAND ON CENTER OF CHEST	Prompts rescuer to correctly place one hand for giving compressions.
"Place heel of other hand directly on top of first hand. Lean over patient with elbows straight."	PLACE OTHER HAND ON TOP OF FIRST HAND	Prompts rescuer to correctly place other hand and body for giving compressions.
"Press the patient's chest down rapidly one third depth of chest, then release"	PRESS CHEST DOWN FIRMLY	Prompts the rescuer to press down one third depth of patient's chest.
"Start CPR"	START CPR	Prompts to start CPR.

Table 2-7: CPR Prompts (continued)

Voice Prompt	Text Display	Situation
"Press" (30 times at 100/minute) (or) Metronome (30 times at 100/minute) (or) No prompt (silence) **Note:** Option is selected in MDLink software.	{CPR COUNTER}	CPR counter shows the amount of time remaining for the CPR session.
"Stop compressions"	STOP COMPRESSIONS	Prompts at the end of each CPR round.
"Give breath, give breath"	GIVE BREATH	Prompts to give two breaths to patient.
"Continue with compressions."	CONTINUE WITH COMPRESSIONS	Prompts in subsequent rounds of the same CPR session. **Note:** This prompt is available only in Enhanced Mode.
"Stop CPR"	STOP CPR	Prompts to stop CPR.
"Continue CPR"	CONTINUE CPR	Prompts when Enhanced Mode is not selected in MDLink. Prompts when lid is reopened during CPR cycle.

Table 2-8: Pad Issues

Voice Prompt	Text Display	Situation
"Make sure pad connector is plugged into AED."	CHECK CONNECTOR IS PLUGGED INTO AED	Prompts when defibrillation pads connector is not correctly inserted into pad socket.
"Press pads firmly to patient's bare skin."	PRESS PADS FIRMLY TO BARE SKIN	Prompts when better pad connectivity to the patient's skin is required because impedance is too high.

Table 2-9: Other Prompts

Voice Prompt	Text Display	Situation
"Battery Low"	BATTERY LOW	Occurs once when the battery voltage becomes low, although a rescue can continue for approximately 9 more shocks. When the battery is too low to do a rescue, the following will occur: 1. **BATTERY LOW** appears on the LCD 2. Status indicator becomes red 3. AED beeps once every 30 seconds You must replace the battery before continuing with the rescue. If the battery is depleted, all AED activity terminates.
"Analysis Interrupted. Stop Patient Motion."	ANALYSIS INTERRUPTED STOP PATIENT MOTION	When the AED detects ECG noise artifact, stop moving or touching the patient. Remove other electronic devices within a 5 meter radius.

Table 2-9: Other Prompts (continued)

Voice Prompt	Text Display	Situation
"Open Lid to Continue Rescue."	OPEN LID TO CONTINUE RESCUE	When the lid is inadvertently closed during a rescue, this prompt will repeat for 15 seconds.
"Rhythm Changed. Shock Cancelled."	RHYTHM CHANGED SHOCK CANCELLED	When the device is prepared to shock then detects a change in rhythm and therefore cancels the shock.
"Remove Cable to Continue Rescue."	REMOVE CABLE TO CONTINUE RESCUE	When a serial communication cable is connected to the AED during a rescue, the phrase repeats until the cable is disconnected.
"Communications Mode"	COMMUNICATIONS MODE	When the lid is open and the serial communication cable is plugged into the AED.
"Service Required"	SERVICE REQUIRED	Occurs after the self-tests determine that the AED is functioning improperly. The prompt "service required" is heard when the lid is opened. The red service indicator illuminates and "service required" repeats until the lid is closed. After the lid is closed, an alarm beeps until the battery is removed or becomes depleted.

3 Perform a Rescue

What's in this chapter

- Warnings and Cautions 3-2
- Step 1: Assess the Patient 3-4
- Step 2: Prepare the Patient 3-5
- Step 3: Place Pads 3-6
- Step 4: Analyze the ECG 3-7
- Step 5: Deliver a Shock 3-8
- Step 6: Administer CPR 3-9
- Step 7: Prepare the AED for the Next Rescue 3-11

This section presents information about how to use the AED to perform a rescue.

These are the general steps in performing a rescue:

1. Assess the patient.
2. Prepare the patient.
3. Place the defibrillation pads.
4. Analyze the patient's ECG.
5. Deliver a defibrillation shock.
6. Administer CPR.

Warnings and Cautions

These warnings and cautions must be observed to prevent problems during a rescue.

DANGER: Fire and Explosion Hazard

Do not use in the presence of flammable gasses (including concentrated oxygen) to avoid possible explosion or fire hazard.

WARNING: Shock Hazard

Defibrillation shock current flowing through unwanted pathways is potentially a serious electrical shock hazard. To avoid this hazard during defibrillation abide by all of the following:

- Do not touch the patient, unless performance of CPR is indicated
- Do not touch metal objects in contact with the patient
- Keep defibrillation pads clear of other pads or metal parts in contact with patient
- Disconnect all non-defibrillator proof equipment from the patient before defibrillation

WARNING: Shock and Possible Equipment Damage

Disconnect all non-defibrillator proof equipment from the patient before defibrillation to prevent electrical shock and potential damage to the equipment.

WARNING: Electric Shock and Fire Hazard

Do not connect any telephones or unauthorized connectors to the socket on this equipment.

CAUTION: Use only Cardiac Science Approved Equipment

Using batteries, pads, cables, or optional equipment other than those approved by Cardiac Science may cause the AED to function improperly during a rescue.

CAUTION: Possible Improper AED Performance

Using pads that are damaged or expired may result in improper AED performance.

CAUTION: Serial Communication Cable

The AED will not function during a rescue when the serial communication cable is connected to its serial port. When the serial communication cable is connected to the AED during a rescue, the prompt "Remove cable to continue rescue" will be heard until you remove the serial communication cable from the AED.

CAUTION: Possible Radio Frequency (RF) Susceptibility

RF susceptibility from cellular phones, CB radios, and FM 2-way radio may cause incorrect rhythm recognition and subsequent shock advisory. When attempting a rescue using the AED, do not operate wireless radiotelephones within 1 meter of the AED – turn power OFF to the radiotelephone and other like equipment near the incident.

CAUTION: Possible Interference with Implanted Pacemaker

Therapy should not be delayed for patients with implanted pacemakers and a defibrillation attempt should be made if the patient is unconscious and not breathing. The AED has pacemaker detection and rejection, however with some pacemakers the AED may not advise a defibrillation shock.

When placing pads:

- Do not place the pads directly over an implanted device.
- Place the pad at least an inch from any implanted device.

CAUTION: Moving the Patient During a Rescue

During a rescue attempt, excessive jostling or moving of the patient may cause AEDs to improperly analyze the patient's cardiac rhythm. Stop all motion or vibration before attempting a rescue.

Step 1: Assess the Patient

Determine that the patient is over 8 years of age or weighs more than 55 pounds (25 kg) and is both:

- Unresponsive
- Not breathing

DO NOT delay therapy to determine the patient's exact age or weight. See the directions for use accompanying pediatric pads to replace adult pads with pediatric pads.

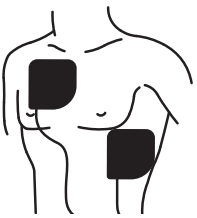
CALL EMERGENCY MEDICAL SERVICES!

Note: When the patient is a child under 8 years of age or weighs less than 55 pounds (25kg), the AED should be used with the Model 9730 Pediatric Attenuated Defibrillation Pads.

Step 2: Prepare the Patient

When the AED prompts…	Do this…
--	**1.** Open the AED lid. **2.** Wait until the LEDs illuminate.
"Stay calm. Follow these voice instructions. Make sure 911 is called now."	--
"Begin by exposing the patient's bare chest and torso. Remove or cut clothing if needed."	**3.** Remove clothing from the patient's chest. **4.** Ensure that the patient's skin is clean and dry. **5.** Dry the patient's chest and shave excessive hair if necessary.

Step 3: Place Pads

When the AED prompts…	Do this…
"When patient's chest and torso are exposed, remove square foil package from lid of AED. Tear open foil package across dotted line and remove pads."	**1.** Keeping the pads connected to the AED, tear open the package. **2.** Remove the pads from the package. Leave the package attached to the pad wires.
"Next, separate one of the white pads completely from blue plastic liner. Begin peeling from the tabbed corner."	**3.** With a firm, steady pull, peel one pad away from the blue plastic liner. It does not matter which pad to use.
"Firmly place the pad without the liner on the patient, exactly as illustrated. This pad can be placed on either of the two locations shown."	**4.** Place the pad on the bare upper chest as shown. 
"Next, peel the blue plastic liner off of the second white pad. Firmly place the second pad on the opposite location, exactly as illustrated."	**5.** Pull the blue liner from the second pad. **6.** Place the pad on the bare lower chest as shown.

Note: Cardiac Science's standard defibrillation pads are non-polarized and can be placed in either position as shown on the pad package.

Step 4: Analyze the ECG

When the AED prompts…	Do this…
"Do Not Touch Patient. Analyzing Heart Rhythm. Please Wait." The AED begins analyzing the cardiac rhythm of the patient.	**1.** Do not touch the patient. **2.** Wait for the next prompt.

During the analysis phase, you may hear one or more of these prompts:

If the AED prompts…	This is the problem…	Do this…
"Make sure pad connector is plugged into AED."	The pads are disconnected from the AED.	Ensure that the connector is properly plugged into the AED.
"Press pads firmly to patient's bare skin."	The pads are not properly placed or are loose.	Ensure that pads are firmly placed on clean, dry skin.
"Analysis interrupted. Stop patient motion." The AED restarts the analysis.	The patient is excessively jostled or there is a strong electromagnetic emitting device nearby (within 5 meters).	Remove the electronic device or stop the excessive motion.

Step 5: Deliver a Shock

When the AED prompts…	Do this…
"Preparing shock. Move away from the patient."	Ensure that no one is touching the patient.
For the Powerheart AED G3: When the AED is ready to deliver a defibrillation shock, the Shock button flashes. "Press red flashing button to deliver shock"	1. Ensure that no one is touching the patient. 2. Press the Shock button. If you do not press the Shock button within 30 seconds of hearing the prompt, the AED disarms the charge and prompt you to start CPR.
For the Powerheart AED G3 Automatic: "Shock will be delivered in three, two, one." The AED delivers a shock.	Ensure that no one is touching the patient.
After the AED delivers the defibrillation shock: "Shock delivered."	--
"It is now safe to touch the patient."	--

When the AED is charged, it continues to analyze the patient's heart rhythm. If the rhythm changes and a shock is no longer needed, the AED prompts, "Rhythm changed. Shock cancelled," and then prompts you to start CPR.

Step 6: Administer CPR

After the AED delivers a shock or detects a non-shockable rhythm, it enters CPR mode.

When the AED prompts...	Do this...
"Place heel of one hand on center of chest between nipples. Place heel of other hand directly on top of first hand. Lean over patient with elbows straight. Press the patient's chest down rapidly one-third depth of chest, then release."	Give the patient chest compressions: **1.** Place the heel on one hand on the chest between the nipples. **2.** Place the heel of the other hand on top of the first hand. **3.** Lean over the patient, keeping your elbows straight. **4.** Press the patient's chest down rapidly one-third the depth of the chest, then release.
"When instructed give 30 rapid compressions. Then give two breaths. Start CPR."	--
"Stop compressions."	Stop the chest compressions.
"Give breath." (repeated)	Give the patient two breaths.
"Continue with compressions."	Give the patient chest compressions, as directed above. Follow the countdown timer on the text display for the number of compressions and breaths.

This cycle continues until the CPR time expires. At the end of CPR, the AED prompts, "Stop CPR". The AED returns to the ECG Analysis Mode (see *Step 4: Analyze the ECG* on page 3-7).

If the patient is conscious and breathing normally, leave the pads on the patient's chest connected to the AED. Make the patient as comfortable as possible and wait for Emergency Medical Services (EMS) personnel to arrive. Continue to follow the voice prompts until the EMS personnel arrive, or proceed as recommended by the medical director.

Step 7: Prepare the AED for the Next Rescue

After transferring the patient to EMS personnel, prepare the AED for the next rescue:

1. Retrieve the rescue data stored in the internal memory of the AED.
2. Use RescueLink software installed on a PC.
3. Connect a new pair of pads to the AED.
4. Close the lid.
5. Verify that the status indicator on the AED handle is green.

4 Maintenance and Troubleshooting

What's in this chapter

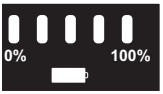
- Indicator Troubleshooting Table 4-2
- Cleaning and Care 4-4
- Scheduled Maintenance 4-5
- Authorized Repair Service 4-7

This section presents information about the AED diagnostics self-tests, maintenance, and service indications.

Indicator Troubleshooting Table

The following is a troubleshooting table for the AED indicators.

Table 4-1: Indicator Troubleshooting Table

View	Symptom	Solution
	Red SERVICE indicator (LED) is lit.	Maintenance by authorized service personnel is required. Call Cardiac Science Customer Service (see page 4) or your local Cardiac Science distributor.
	Red Pads indicator (LED) is lit.	Connect the pads or replace with a new pair.
	The last battery indicator (LED) is red.	The battery is low. Replace with a new battery.
	STATUS INDICATOR is RED, and no other indicators on the diagnostic panel are lit.	The battery power is completely depleted. Replace with a new battery. If STATUS INDICATOR remains RED call Cardiac Science Customer Service or your local Cardiac Science distributor.

CAUTION: Temperature Extremes.

Exposing the AED to extreme environmental conditions outside of its operating parameters may compromise the ability of the AED to function properly. The RescueReady daily self-test verifies the impact of extreme environmental conditions on the AED. If the daily self-test determines environmental conditions outside of the AED's operating parameters, a "SERVICE REQUIRED" alert will be issued to prompt the user to move the AED to environmental conditions within the acceptable operating parameters at once. See *Technical Data* on page 5-1

Cleaning and Care

Use a cloth dampened with an approved cleaning solution to wipe the case. Dry the case with a clean cloth. Do not spray or pour the cleaning solution on the case or submerge the AED.

Use one of these solutions to clean the case of the AED: soapy water, ethanol, 91% isopropyl, or 3% bleach solution.

The AED and its accessories cannot be sterilized.

CAUTION: Case Cleaning Solutions.

When disinfecting the case, use a non-oxidizing disinfectant, such as ammonium salts or a glutaraldehyde based cleaning solution, to avoid damage to the metal connectors.

Scheduled Maintenance

Perform the following tests per the schedule indicated:

Daily Maintenance

Check the Status Indicator to ensure that it is GREEN. When the indicator is GREEN, the AED is ready for a rescue. If the indicator is RED, refer to the Troubleshooting Table in this chapter.

Monthly Maintenance

Perform the following procedure each month (28 days)

1. Open the AED lid.
2. Wait for the AED to indicate status: Observe the change of the STATUS INDICATOR to RED. After approximately 5 seconds, verify that the STATUS INDICATOR returns to GREEN.
3. Check the expiration date on the electrodes.
4. Listen for the voice prompts.
5. Close the lid and observe the change of the STATUS INDICATOR to RED. After approximately 5 seconds, verify that the STATUS INDICATOR returns to GREEN.

Annual Maintenance

Perform the following tests annually to confirm that the diagnostics are functioning properly and to verify the integrity of the case.

Check the Integrity of the Pads and Circuitry:

1. Open the AED lid.
2. Remove the pads.
3. Close the lid.
4. Confirm that the STATUS INDICATOR turns RED.
5. Open the lid and confirm that the Pad indicator is lit.
6. Reconnect the pads and close the lid.
7. Make sure the expiration date is visible through the clear window of the lid.

8. Check to make sure that the STATUS INDICATOR is GREEN. If the pads are not installed properly, the PAD indicator will illuminate; call Customer Service for assistance.
9. Open the lid and confirm that no diagnostic indicators are lit.
10. Check the expiration date of the pads; if expired, replace them.
11. Check the pads packaging integrity.
12. Close the lid

Check the Integrity of the Service Indicator (LED) and Circuitry:

1. Immediately after opening the AED lid, press and hold the Shock button and confirm that the Service LED is lit.
2. Release the Shock/Continue button.
3. Close the lid.
4. Verify that the STATUS INDICATOR remains RED.
5. Open the lid and confirm that no diagnostic indicators are lit.
6. Close the lid.
7. Verify that the STATUS INDICATOR turns GREEN.

Check the Integrity of the Case:

Examine the molded case of the AED for any visible signs of stress. If the case shows signs of stress, contact Cardiac Science Customer Service or contact your local Cardiac Science distributor (see *Contact Information*).

Authorized Repair Service

The AED has no user-serviceable internal components. Try to resolve any maintenance issues with the AED by using the Troubleshooting Table presented in this chapter. If you are unable to resolve the problem, contact Cardiac Science Customer Service or contact your local Cardiac Science distributor (see *Contact Information*).

WARNING: Shock Hazard.

Do not disassemble the AED. Failure to observe this warning can result in personal injury or death. Refer maintenance issues to Cardiac Science authorized service personnel.

Note: The warranty will be void upon unauthorized disassembly or service of the AED.

5 Technical Data

What's in this chapter

- Parameters 5-2
- Star Biphasic Waveform 5-7

This section lists the AED parameters and describes the Star Biphasic waveform.

Parameters

Table 5-1: Parameters

Parameter	Detail
Operation	Semi-Automatic (shock advisory) Automatic
Audible Alerts	Voice Prompt Maintenance Alert
Visible Indicators	Status Indicator Battery Status Indicator Service Indicator Pads Indicator Text Display
Rescue Data Storage	Internal with 60 minutes ECG data with event annotation
Dimensions	Height: 8 cm (3.3 in) Width: 27 cm (10.6 in) Depth: 31 cm (12.4 in)
Weight (Batteries and Pads)	9390: 3.10 kg (6.6 lb)
Environmental Operation and Standby Conditions	Temperature: 0°C to 50°C (32°F to 122°F) Humidity: 5% to 95% (non-condensing) Pressure: 57kPa (+15,000ft) to 103kPa (-500ft)
Shipment and Transport environmental Conditions (for up to 1 week)	Temperature: -30°C to 65°C (-22°F to 149°F) Humidity: 5% to 95% (non-condensing) Pressure: 57kPa (+15,000ft) to 103kPa (-500ft)
Pads	Self-adhesive, disposable defibrillation pads Minimum combined surface area: 228cm^2 Extended length of lead wire: 1.3m

Table 5-1: Parameters (continued)

Parameter	Detail
9146 Lithium Battery Specifications	Output voltage: 12VDC (max) Batteries are non-rechargeable Lithium contents: 9.2g (max) Check local regulations for disposal information Full Operational Replacement Guarantee (from date of installation): 4 Years Estimated Shelf Life (from date of manufacture): 5 Years Typical Shocks: up to 290 shocks **Note:** The battery operating life depends on the type of battery, actual usage and environmental factors.
Batteries and Capacitor Charge Times	A new battery typically takes 10 seconds to charge the AED to maximum energy. A battery with reduced capacity causes the red LED light to initially turn ON and typically takes 13 seconds to charge a fully discharged AED to maximum energy.
AED Self test Sequence	Daily: Battery, pads, internal electronics, Shock/ Continue or button, and software (no charge). Weekly: Battery, pads, internal electronics, Shock/ Continue, and software (partial charge). Monthly (every 28 days): Battery under load, pads, internal electronics, full-energy charge cycle, Shock/ Continue button, and software (full charge). Open Lid (when lid is opened): Battery, pads, internal electronics, Shock/Continue button, and software. Close Lid (when lid is closed): Battery, pads, internal electronics, Shock/Continue button, and software.

Table 5-1: Parameters (continued)

Parameter	Detail
Safety and Performance	Model 9390 The AED has been designed and manufactured to conform to the highest standards of safety and performance including electromagnetic compatibility (EMC). The 9390 and pads conform to the applicable requirements of the following: CE 0086 **CE** CE Marked by BSI 0086 per the Medical Device Directive 93/42/EEC **ETL** Classified by ETL Semko with respect to electric shock, fire and mechanical hazards only in accordance with UL 60601-1, CAN/CSA C22.2 No.601.1-M90, EN60601-1 and EN60601-2-4. Conforms to UL Standard UL60601-1. Certified to CAN/CSA Standard C22.2 No. 601.1-M90.
	Electrical, Construction, Safety and Performance IEC 60601-1 (1998), Amendments 1 (1991) & 2 (1995) IEC 60601-2-4 (2002) ANSI/AAMI DF-39 (1993) **Electromagnetic Compatibility (EMC)** IEC 60601-1-2 (2001) IEC 60601-2-4 Section 36 ANSI/AAMI DF-39 (1993) Section 3.3.21
Emissions	EM: EN 55011/CISPR 11, Group 1, Class B Magnetic: ANSI/AAMI DF39, <0.5mT on surface, except for within 5cm of the lid magnet and the speaker

Table 5-1: Parameters (continued)

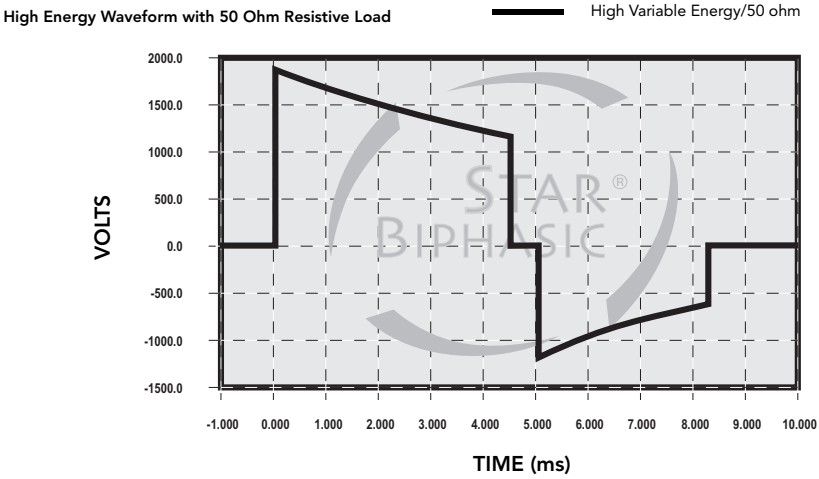
Parameter	Detail
Immunity	EM • EC 61000-4-3, Level X, (20V/m) • EC 60601-2-4, Section 36.202.3 (20V/m) • AAMI DF39, Section 3.3.21.2.1 Magnetic • IEC 61000-4-8 (2001) • IEC 60601-2-4 (2002), Section 36.202.8 • AAMI DF39, Section 3.3.21.2.3 80A/m, 47.5Hz – 1,320Hz ESD • IEC 61000-4-2, Level 3 • IEC 60601-2-4 (2002), Section 36.202.2 • 6KV contact discharge, 8KV air gap discharge
Environmental Conditions	Free Fall Drop: IEC 60068-2-32 (1975) AM 2 (1990), 1 meter Bump: IEC 60068-2-29 (1987), 40g and 6000 bumps Vibration (Random): IEC 60068-2-64 (1993): 10Hz – 2KHz, 0.005 – 0.0012 g^2/Hz Vibration (Sine): IEC 60068-2-6 (1995): 10Hz – 60Hz, 0.15 mm and 60Hz – 150Hz, 2g Enclosure Protection: IEC 60529 (2001), IP24
Shipping and Transportation Conditions	ISTA Procedure 2A
RHYTHMx ECG Analysis Performance	The AED RHYTHMx ECG Analysis system analyzes the patient's ECG and advises you when the AED detects a shockable or non-shockable rhythm. This system makes it possible for a person, with no training in the interpretation of ECG rhythms, to offer defibrillation therapy to victims of sudden cardiac arrest.

Table 5-1: Parameters (continued)

Parameter	Detail
Cardiac Rhythms Used to Test the Rhythm Recognition Detection System for Powerheart G3 AEDs	Shockable Rhythm* – VF: Meets AAMI DF 39 requirement and AHA recommendation of Sensitivity of >90% (*Automatic External Defibrillators for Public Access Defibrillation: Recommendations for Specifying and Reporting Arrhythmia Analysis Algorithm Performance, Incorporating New Waveforms and Enhancing Safety, AHA AED Task Force and approved by the AHA Science Advisory and Coordinating Committee. Circulation, 1997(95), pp 1677-1682) Shockable Rhythm – VT: Meets AAMI DF 39 requirement and AHA recommendation of Sensitivity of >75% Non-shockable Rhythm – NSR: Meets AAMI DF 39 requirement (>95%) and AHA recommendation (>99%) of Specificity Non-shockable – Asystole: Meets AAMI DF 39 requirement and AHA recommendation of Specificity of >95% Non-shockable: Meets AAMI DF 39 requirement and AHA recommendation of Specificity – all other rhythms of >95% For detailed information contact Cardiac Science for white papers: • P/N 112-2013-001 (Pediatric Defibrillation Instructions) • P/N 110-0033-001 (RHYTHMx White Paper) • P/N 400781 (STAR Biphasic White Paper)

Star Biphasic Waveform

The waveform generated by the AED is a Biphasic Truncated Exponential waveform that is compliant with ANSI/AAMI DF2 and DF39. The following is a graph of the waveform voltage as a function of time when the AED is connected to a 50 Ohm resistive load.



The Biphasic Truncated Exponential (BTE) waveform uses variable energy. The actual energy delivered will vary with the patient's impedance and the device will deliver a shock when impedance is between 25-180 Ohms. Energy will be delivered at three different levels referred to as ultra-low variable energy, low variable energy, and high variable energy as shown in the waveform tables on the following pages.

Table 5-2: Ultra-low Variable Energy (150 VE) Powerheart G3 Waveform

	Phase 1		Phase 2		
Patient's Impedance (Ohms)	Voltage* (Volts)	Duration* (MS)	Voltage* (Volts)	Duration* (MS)	Energy** (Joules)
25	1393	3.3	743	3.2	145-196
50	1420	4.5	909	3.2	128-173
75	1430	5.8	973	3.2	116-156
100	1434	7.0	1007	3.2	108-146
125	1437	8.3	1027	3.2	102-138
150	1439	9.5	1040	3.2	98-132
175	1441	10.8	1049	3.2	95-128

Table 5-3: Low Variable Energy (200 VE) Powerheart G3 Waveform

	Phase 1		Phase 2		
Patient's Impedance (Ohms)	Voltage* (Volts)	Duration* (MS)	Voltage* (Volts)	Duration* (MS)	Energy** (Joules)
25	1609	3.3	858	3.2	193-260
50	1640	4.5	1050	3.2	170-230
75	1651	5.8	1124	3.2	155-209
100	1656	7.0	1163	3.2	144-194
125	1660	8.3	1186	3.2	136-184
150	1662	9.5	1201	3.2	131-176
175	1663	10.8	1212	3.2	126-170

Table 5-4: High Variable Energy (300 VE) Powerheart G3 Waveform

	Phase 1		Phase 2		
Patient's Impedance (Ohms)	**Voltage* (Volts)**	**Duration* (MS)**	**Voltage* (Volts)**	**Duration* (MS)**	**Energy** (Joules)**
25	1869	3.3	997	3.2	260-351
50	1906	4.5	1220	3.2	230-311
75	1918	5.8	1306	3.2	210-283
100	1925	7.0	1351	3.2	195-263
125	1928	8.3	1378	3.2	184-248
150	1931	9.5	1396	3.2	176-238
175	1933	10.8	1408	3.2	170-230

* All values are typical.

**Allowable energy range.

Contact Information

Contact Powerheart customer service to order additional Powerheart G3 AEDs and accessories. For assistance with the product, contact technical support. Cardiac Science Corporation provides customer service and technical support through these numbers and addresses:

Customer Service {Powerheart}	Technical Support
1-800-991-5465 (US)	1-888-466-8686 (US)
1-425-402-2690 (US and Canada)	1-425-402-2495 (US and Canada)
customerservice@cardiacscience.com	techsupport@cardiacscience.com

Outside the United States, contact International Operations or your local representative.

International Operations
Kirke Vaerloesevej 14
Vaerloese, Denmark DK3500
(45) 4438-0500

Cardiac Science Corporation
3303 Monte Villa Parkway
Bothell, WA 98021
USA

(800) 426-0337 (U.S.A. and Canada)
(425) 402 2000
techsupport@cardiacscience.com
www.cardiacscience.com

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